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GENERAL NOTES.

Doctorates in Astronomy in 1911.—Of two hundred and thirty-nine doctorates in the sciences granted by American universities in the years 1911, four were conferred in astronomy. The theses for which the degree of Doctor of Philosophy were granted are as follows:

DANIEL BUCHANAN, University of Chicago: "A Class of Periodic Solutions of the Problem of Three Bodies, Two of Equal Mass, the Third Moving on a Straight Line."

EVERETT I. YOWELL, University of Cincinnati: "Orbit of Asteroid 1910 JR."

KEIVIN BURNS, University of Minnesota: "Photographic Study of the Region of the Great Nebula in Orion."

CHARLES P. OLIVIER, University of Virginia: "175 Parabolic Orbits and other Results deduced from Observations of 6,200 Meteors."

R. H. BAKER, Ph. D. (Pittsburgh, 1910), has been appointed director of the Laws Observatory, University of Missouri.

The Astronomical Fellowship of the Nantucket Maria Mitchell Association.—This Association offers an astronomical fellowship of one thousand dollars, to a woman, for the year beginning June 15, 1912, under the following conditions: The year shall be divided into two periods, approximately as follows: June 15th to December 15th on Nantucket, where the observatory is equipped with a five-inch Alvan Clark telescope. This period shall be occupied in observation, research, or study, and in lectures or instruction to classes or individuals. February 1st to June 15th at one of the larger observatories. This semester shall be occupied in original research and study. Every fourth year the fellowship shall be available during the entire year for study at one of the larger observatories in Europe or America. No competitive examination will be held, but the candidate must present evidences of qualification. Details may be obtained from the Secretary of the Committee, Mrs. CHARLES S. HINCHMAN, 3635 Chestnut Street, Philadelphia.

Standard Time in Portugal.—Beginning with January 1, 1912, Standard time will be used throughout Portuguese territories. In South America it has been adopted by Chile and Peru, is under consideration in Argentina, and it seems probable that the day is not very distant when the use of standard time will be practically universal. It is noted, however, in *Nature* of August 24th that the city of Canterbury seems determined to use its own local time. The Dean and Chapter, in mediæval spirit, refuse to recognize any such "modern innovation" as Greenwich time, and have recently distributed cards intimating that the time observed in Canterbury Cathedral is four and a half minutes ahead of Greenwich time.

Astronomy has lost a generous benefactor by the death at the age of 73 of Mr. J. D. HOOKER, of Los Angeles, who, after a successful business life as an ironmaster, was taking an active interest in science and devoting much of his wealth to the furthering of astronomy. The 100-inch mirror now being ground in the workshops at Pasadena for the Mount Wilson Solar Observatory, in which he took much personal interest, is being made at his expense.

The Sun is at present passing through its minimum of sun-spot activity; by the end of the year the number of sun-spots should begin again slowly to increase. The last well-marked minimum was in 1901.

A sum amounting to over eight thousand francs has been raised by subscription under the auspices of the Société Astronomique de France to provide for the gift of an artistic medalion to M. FLAMMARION in commemoration of the twenty-fifth anniversary of the founding of the society, and the fiftieth anniversary of FLAMMARION'S first publication.

The Collected Works of Leonhard Euler.—Among the New Publications listed on another page will be found the first volume of the first series of the complete works of LEONHARD EULER, published under the auspices of the Swiss Academy

of Natural Sciences. The year 1907 marked the two hundredth anniversary of EULER's birth, and the publication of his complete writings was decided upon by the Academy in that year, as a fitting memorial to a great man, and a worthy contribution to science as well. The undertaking is a gigantic one, for in addition to his voluminous published memoirs, EULER left a long series of papers in manuscript, many of which have not yet been published. The generous support of other scientific societies and of scientific men, the world over, has made it possible, however, and the first volume of the mathematical series has now been distributed. This series is to contain 18 volumes. The second series, on mechanics and astronomy, will have 16 volumes; the third, on physics, with miscellaneous writings and correspondence, 11 volumes. The price per volume, bound in board covers, is not to exceed 25 francs, plus postage, to those who subscribe for the complete set.

The Astrographic Catalogue.—The recent distribution of Volume VII of the Oxford Section of the Astrographic Catalogue, and of Part 2 of Volume V of the "Bulletin du Comité International Permanent pour l'Exécution photographique de la Carte du Ciel," has led me to examine the present status of this great piece of work, with results that I think may be of interest to the readers of these *Publications*.

It will be recalled that the scheme to photograph the entire sky on a uniform system was initiated more than twenty years ago, the plan being to use telescopes of the same design and aperture (13 inches) and to take two sets of plates of each region photographed, one to include all stars to the 11.0 magnitude, the other all stars to the 14.0 magnitude. The former set of plates was to be measured and the resulting star places catalogued; the latter set was to be utilized in making charts to cover the entire sky.

To make it possible to complete the work within a reasonable length of time, the sky was divided into zones, each of the eighteen participating observatories agreeing to do the required work for a particular zone. As was to be expected, much experimental work was necessary before the actual work-

ing program could be taken up, and many theoretical problems had to be solved before the photographs could be used to best advantage for the determination of star places for the catalogue. The best methods of taking the photographs, of measuring the plates, of carrying out the reductions, of eliminating or reducing to a minimum accidental and systematic errors, have been investigated with great thoroughness and the literature relating to the work has become very extensive. There has been great diversity of opinion (and of practice) in respect to nearly all of these questions, and also in respect to the form of publication of the results. Neither has it been possible for all of the participating observatories to carry on the work with the same degree of rapidity; indeed, one or two of the southern observatories have been obliged to give up their share in the work to others.

At the present time no volumes of the astrographic catalogue have been published for zones south of -3° declination. The general status of the work for the northern hemisphere may be gathered from the following table:

Observatory.	Zone.		
Greenwich	+ 90°	to + 65°	Completely published.
Vatican	+ 64	to + 55	One volume.
Catania	+ 54	to + 47	Parts of four volumes.
Helsingfors	+ 46	to + 40	Two volumes.
Potsdam	+ 39	to + 32	Five volumes.
Oxford	+ 31	to + 25	Seven volumes, completing the catalogue. ¹
Paris	+ 24	to + 18	Two volumes.
Bordeaux	+ 17	to + 11	Two volumes.
Toulouse	+ 10	to + 5	Parts of four volumes.
Algiers	+ 4	to — 2	Introduction and parts of four volumes.

In the "Bulletin du Comité International Permanent," mentioned above, Mr. I. LAGARDE gives formulæ and tables to facilitate the use of these published catalogues. Such a collection is a very convenient thing to have, for so great is the variety of forms of publication, of methods of calculation and of tables adopted for the different zones, that otherwise a careful study of the introduction (sometimes long) to each volume is necessary before one can make practical use of any of the star places given in the catalogues.

September 11, 1911.

R. G. AITKEN.

¹ An eighth volume is to contain a general discussion of the work at Oxford.